

COVID-19: A PANDEMIC THAT HAS HIT THE WORLD HARD

IMPACT, RESPONSE & LEARNINGS

RVVeKommunicate
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INTRODUCTION

Striking the world at the turn of the new decade, the COVID-19 pandemic has already made an indelible mark. Due to its origin in China, the manufacturing hub of the world, this pandemic has had a severe effect on not just health but also the economy, reverberations of which have now echoed across the globe. This paper analyses the impact of this pandemic and the actions taken by different countries in response to it as also the learnings and possible way forward in handling such crises.

BACKGROUND

Coronaviruses (CoV) are a family of viruses causing illness ranging from common cold to more severe diseases like Middle East Respiratory Syndrome (MERS-CoV) and Severe Acute Respiratory Syndrome (SARS-CoV) and even death. Coronaviruses are transmitted between animals and people, naming them zoonotic.

Novel Coronavirus (nCoV) is a new strain that was previously not identified in humans. The previously called 2019 Novel Coronavirus is now known as Coronavirus disease (COVID-19). The virus causing the disease has been termed as Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2). The virus has its origin in bats. (WHO Website; CDC (Centres for Disease Control and Prevention)

COVID-19 was first reported in Wuhan, China on 31 December, 2019. The International Health Regulations Emergency Committee of the World Health Organisation (WHO) declared COVID-19 as a Public Health Emergency of International Concern (PHEIC) on 30 January, 2020 and as a Pandemic on 11 March 2020.

A Pandemic is a global outbreak of new disease. The term comes from the Greek word “pan,” meaning “all,” and “demos,” meaning “people”. Pandemics happen when there is an emergence of new virus and it spreads easily from person-to-person as a result of little to no-pre-existing immunity against the discovered virus. This is the first pandemic known to occur by the emergence of a new coronavirus. Earlier, in June 2009 the WHO declared ‘novel influenza A (H1N1)’ as a pandemic and start of the first flu pandemic in 40 years. It was detected first in the United States and spread quickly across the United States and the world.

IMPACT OF COVID-19

Pandemics, being large scale outbreaks, pose a considerable threat to the society. While the more crucial effect is on human lives, there are also repercussions for the economy. A pandemic may have significant economic and social implications resulting from lockdowns across the globe. This section deals with the impact of the COVID-19 pandemic on different sectors of the Indian Economy and also its impact on global regulations for trade.

Impact on Different Sectors

The Coronavirus Pandemic has not left any sector untouched. Trade flow across the globe has been affected due to this major health crisis. The outbreak has impacted the Gross Domestic Product (GDP) of India with agencies like CRISIL already forecasting a downfall in India's GDP from 5.7 percent to 5.2 per cent for 2020-21¹.

As per UNCTAD, the outbreak has triggered recession in some countries and resulted in global annual growth below 2.5 percent. It also mentions the fact that India lies among the top 15 affected countries resulting from slowdown in China's manufacturing and effectively impacting around USD 348 million of India's trade. The majorly affected sectors by COVID- 19 include transport, tourism, entertainment, automobile, food and hospitality etc. India's overall trade impact can be understood from Fig 1.

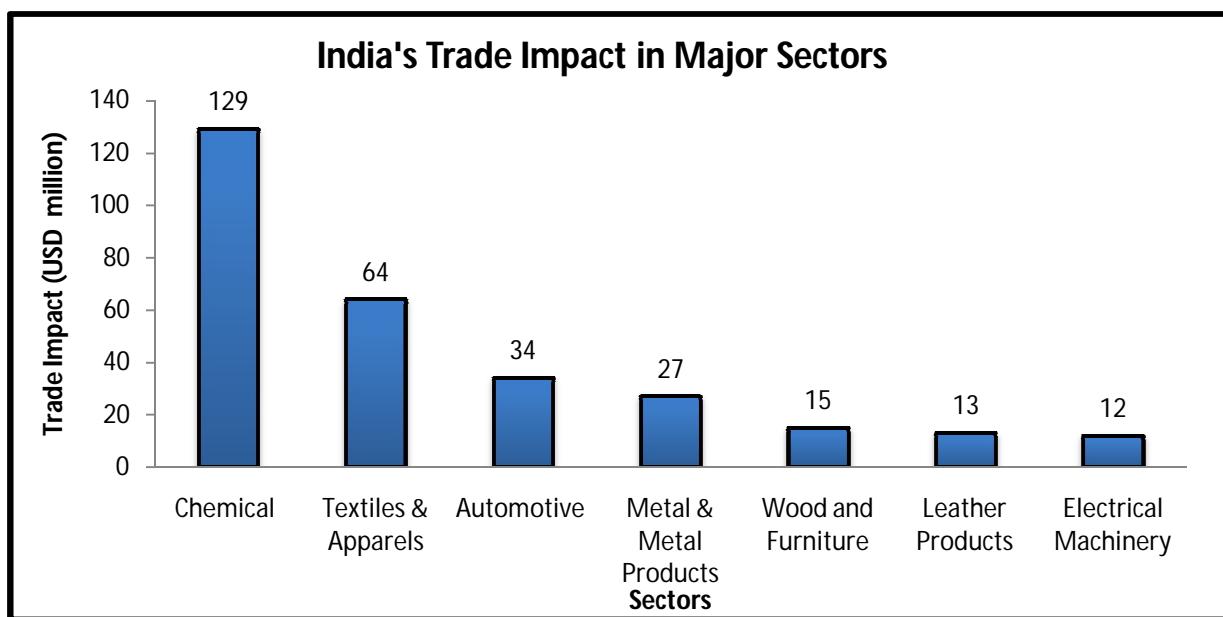


Fig 1: Impact of COVID-19 on Major Sectors in India

¹ <https://www.buisnessstoday.in/current/economy-politics/coronavirus-in-india-finance-minister-task-force-to-work-on-economic-package/story/398721.html>

This impact is due to imposed restriction on movement across the countries to avoid the spread of the disease. As individuals are advised to stay at homes amid this outbreak, the **hospitality sector (Hotels)** has incurred significant loss due to constant decline in hotel occupancy rates.

Similarly, the **entertainment and food sector** also suffers loss due the lock down advisory by the government for theatres and restaurants across the country. Further, the **poultry sector** is already suffering loss of USD 1.5 -2.0 billion a day².

The **transport industry** has also suffered due to increased cancellation of flights and trains during this period as a precautionary measure. As per the Civil Aviation Minister, Mr. Hardeep Singh Puri, the domestic air travel has been reduced by 20-30%³. Additionally, Indian Railway Catering and Tourism Corporation (IRCTC) witnessed 25% decrease in ticket sale and induced a loss of USD 4.5 billion in a week⁴. This loss may continue to increase further as the railway services have been suspended in the country.

The **automobile sector** is also one amongst the major affected sectors as India receives 27% of automotive parts from China. There has also been no export-import due to suspension of shipments between countries.

However, as per reports, some of the sectors like **steel sector** in India will boost their exports amid this outbreak. The main reason for it is inability of the Chinese steel industry to supply steel due to closed ports as a result of the outbreak. This creates an opportunity for growth of Indian steel exporters covering the same markets as China.

The whole scenario may thrust the Indian economy in further turmoil as the pandemic has hit the global economy as well. Countries around the world are bringing in new policies, subsidies or announcing relief packages to counter the impact of this crisis. The total expenditure made by countries to fight against the pandemic is depicted in Table 1.

²FICCI 2020 Report: Impact of COVID-19 on Indian Economy

³ <https://www.news18.com/news/india/domestic-air-travel-shrunk-by-20-30-due-to-coronavirus-outbreak-minister-tells-lok-sabha-2540409.html>

⁴ <https://www.thehindubusinessline.com/economy/logistics/railways-incur-450-crore-loss-around-7-million-cancelled-tickets-due-to-covid-19/article31106655.ece>

Country	Fund allocated under	Amount	Date of allocation
USA	Spending Bill	USD 8.3 billion	6 March 2020
	Financial Aid	USD 50 billion	13 March 2020
	Stimulus Package	USD 1.0 trillion	17 March 2020
China	Reverse Repo Operations 1	USD 174 billion	3 February 2020
	Reverse Repo Operations 2	USD 71 billion	4 February 2020
	Coronavirus- Related funding	USD 15.93 billion	5 March 2020
	Stimulus Package	USD 79 billion	13 March 2020
	Fund to support firms	USD 78.8 billion	--
Italy	Rescue Package	USD 28 billion	16 March
	Monthly Subsidy	USD 642 billion	--
Germany	Stimulus Package	USD 610 billion	14 March 2020
	Fund to buy affected company stake	USD11.21 billion	--
Spain	Financial Aid	USD 220 billion	--
UK	Financial Aid	USD 424 billion	--
Japan	Rescue Package 1	USD 4.6 billion	February 2020
	Rescue Package 2	USD 15 billion	11 March 2020
	Spending Bill	USD 4 billion	--
South Korea	Stimulus Package	USD 9.8 billion	--
	Medical Institution	USD 2.3 trillion	--
	Struggling business and child care subsidies	USD 3 million	--

Table 1: Allocation of funds to combat COVID-19

Source: businessstoday.in

Impact on Regulations

The COVID-19 pandemic has brought forth two separate realities. One, that the world is a global village. Movement of persons and goods across nations has increased tremendously with globalisation. Development of trade value chains and strategic partnerships between countries has also contributed to this. It is because of this interdependence and linkages that a community spread of a pandemic is still such a serious threat in this age of medical advancement.

The second, more new but a far more grave reality is that of protectionism spurred by unilateralism. Popular examples of this trend would be Brexit and the policy decisions taken by the current U.S. administration, which are unabashedly "America First". Even in parts of the developing world, a rising nationalism may bring some changes to the current way of things. Even as countries put up restrictions

on immigration of people in response to the current pandemic, it is not far-fetched to imagine that regardless of an emergency situation, national borders would no longer be so readily open in the future. We could perhaps now see a trend towards moving from globally scattered production bases back in favour of domestic facilities, as also evidenced by recent steps taken by the USA and India to promote domestic manufacturing of pharmaceuticals.

It would be interesting to see how, in such a potential scenario, countries navigate the obligations of international treaties and agreements, not the least of which would be the obligations under the World Trade Organisation (WTO).

Countries have already begun notifying to the WTO, regulations which have been issued to govern trade under the special circumstances of the pandemic. Ukraine has imposed special labelling requirements for meat and poultry products wherein indication of country of origin is now mandatory. Brazil has also approved certain extraordinary conditions for carrying out conformity assessment activities for multiple products. Brazil has also allowed remote inspection mechanisms for issuing Good Manufacturing Certificates for market authorization of Active Pharmaceutical Ingredients (APIs), medicines, and healthcare products. Recognising the COVID-19 as a serious concern which could impact trade activities, more such regulations are likely to follow.

RESPONSE TO COVID-19 (SO FAR)

To overcome any crisis or adverse situation, there are two possible solutions. One requires foresight and is proactive, whereas the other is more reactive in nature, dealing with the situation as and when it arises. Both these types of response, proactive and reactive, may tackle the immediate concern but it is that which prevents a revival of the problem in the future, which is better in the long-run.

This section gives an overview of the measures taken so far by the WHO, other countries and India to combat the COVID-19 pandemic.

Response of the WHO

On December 31, 2019, the WHO was alerted to a cluster of pneumonia patients in Wuhan City, Hubei Province of China. One week later, Chinese authorities confirmed that they had identified a novel (new) coronavirus as the cause of the pneumonia. Since then, the WHO has been working with Chinese authorities and global experts to learn more about the virus, including how it is transmitted, the

populations most at risk, the spectrum of clinical disease, and the most effective ways to detect, interrupt, and contain human-to-human transmission.

With an escalation in the number of cases, and across countries, on January 30, 2020, the WHO declared the COVID-19 outbreak a public health emergency of international concern. Forty days later, with a rapid and exponential increase in the number of affected individuals and resulting casualties, the WHO revised its assessment and declared the disease a pandemic. Since the emergence of this disease, the WHO has issued a number of guidelines for countries to prepare for and respond to it. These guidelines include:

- Strategic Preparedness and Response Plan
- Critical preparedness, readiness and response actions for COVID-19 (Interim guidance)
- Responding to community spread of COVID-19 (Interim guidance)
- Technical guidelines for country-level co-ordination & planning, surveillance, national laboratories, clinical care, infection prevention & control and risk communication
- National capacities review tool for a novel coronavirus (nCoV)

Additionally, a COVID-19 Solidarity Response Fund has been set up. This fund is hosted by two foundations, the UN Foundation and the Swiss Philanthropy Foundation.

Funds will go towards actions outlined in the COVID-19 Strategic Preparedness and Response Plan, to enable all countries – particularly those most vulnerable and at risk, and with the weakest health systems – to prepare for and respond to the COVID-19 crisis including rapidly detecting cases, stopping transmission of the virus, and caring for those affected.

Global Response

Travel bans/restrictions

Recognising that international travel may possibly perpetuate the spread of the pandemic, many countries across the globe have imposed travel restrictions or bans. The restrictions are in many forms:

- **Borders are closed to all incoming foreign nationals-** imposed by European Union, Ukraine, India, Israel, North Korea, Malaysia, Singapore, Taiwan, Vietnam, Bolivia, Canada, Australia and New Zealand, among others.
- **Ban on incoming foreign nationals from specific regions such as China, Italy, EU and Iran-** imposed by USA on travelers from European countries, including the UK and Ireland, as well as China and Iran. Also imposed by Ghana, Kenya, Brazil, Italy, Japan and Turkey among others.

- **Restrictions on outgoing and/or incoming passenger aircrafts-** imposed by Jordan, India, Saudi Arabia, Egypt, Morocco, Sudan and Bolivia, among others.
- **Mandatory 14-day quarantines for citizens/travelers coming from affected regions-** imposed by India, Singapore and Hong Kong, among others.

Ban on large gatherings

Many international conferences, cultural events and sporting events have been cancelled or postponed, including Euro 2020, the Copa America, the French Open, the Indian Premier League, the Met Gala, the Cannes Film Festival, Japan's Cherry Blossom Festival, the Glastonbury Music Festival and this year's meeting of G7 leaders in the US.

Measures taken by USA

USA is generally acknowledged as a global leader in technology and an economic superpower. Considering this, we take a closer look at the responsiveness of USA towards the COVID-19 outbreak.

The U.S. government and Pharmaceutical Industry have put in considerable efforts to combat COVID-19. The Centers for Disease Control and Prevention is studying the virus worldwide and helping communities respond locally. Their Department of Energy is researching COVID-19 at the National Labs. Additionally, the Food and Drug Administration (FDA) is working with the medical industry to develop vaccines, drugs, and diagnostic tests. Information on arrival restrictions for certain foreign nationals and news and updates on Travel, Immigration, and Transportation are regularly released to the public.

Frequent advisories on workforce status and guidelines for the operations of various authorities under these new circumstances are also issued regularly.

Furthermore, the Small Business Administration (SBA) is offering low-interest Economic Injury Disaster Loans (EIDLs) businesses and non-profits impacted by coronavirus (COVID-19).

International Cooperation is also a critical area in this situation. The US Department of State is working with international governments to combat COVID-19 and has also issued travel advisories.

Lastly, the U.S. Agency for International Development (USAID) is providing funding to international organizations to combat COVID-19.

Response of India

Since the news of a new viral disease emerged from China, India has been alert. The preparedness and response to this pandemic, including the capabilities of the industry and the research community have all been tested so far and will surely be tested some more. With a total number of only 341 active cases (as on March 22) after nearly two months of reporting its first case, India's plans to control the spread are seemingly working. A collection of the measures undertaken by the Indian Government so far is depicted in Fig.2. In addition to these measures, India has also achieved **awareness building** through the following:

- One of the first awareness initiatives was the mandatory phone caller tune message which would give awareness about the disease.
- Setting up of a dedicated webpage to provide authentic information, in addition to the information provided on website of the Ministry of Health and Family Welfare (MoHFW).
- Creation of an information resource bank for the public. This includes a poster on Do's and Don'ts, an informative comic book for Children and posters for Indians travelling from abroad, among others.
- Travel advisories were issued on a regular basis on the MoHFW website.
- Guidelines for healthcare facilities, testing centers, ambulance transfers and home care were all issued.

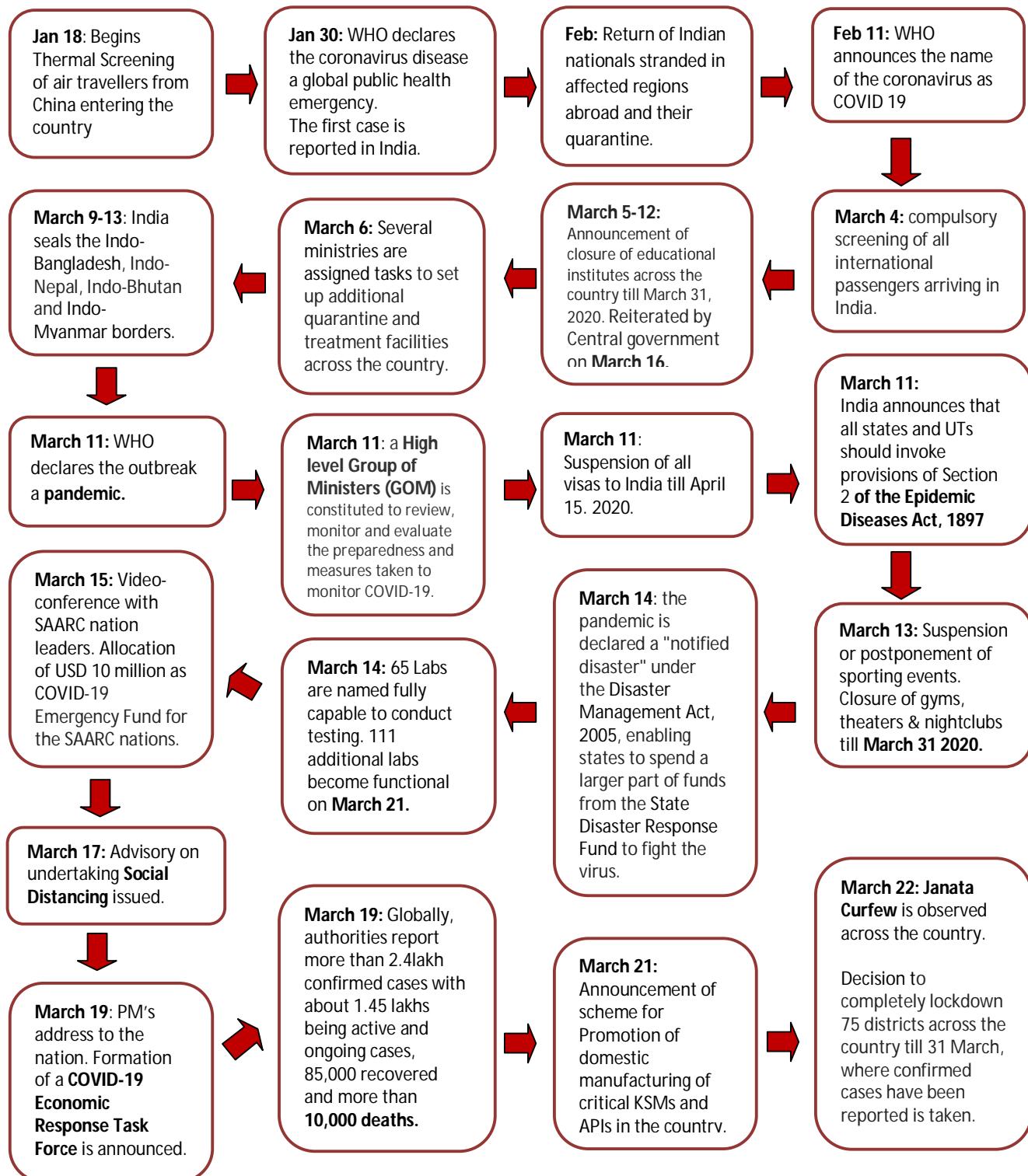


Fig 2: A timeline of the virus outbreak and steps taken by the Indian Government

ROLE OF PHARMACEUTICAL SECTOR

As mentioned, the global economy has experienced a major downturn due to the outbreak of COVID-19. Yet, amid all this tumult created by the economic slowdown, pharmaceutical industry is the one with the biggest role to play.

The Big Pharma Companies who would perhaps normally view the situation as an opportunity for business growth are now collaborating with governments in an endeavour to thwart the pandemic. For example, the company named "Rising Pharmaceuticals" which manufactures drug chloroquine doubled its price in December 2019, when COVID-19 initially made its presence known in China. However, with the disease declared as a pandemic, the company has now decreased the prices to half. Other companies like the drug giant Bayer have also now extended its support to the Government of United States, with a donation of 3- million tablets of chloroquine.

Testing

In the U.S., the FDA is working with partners of the government, including CDC, and international partners against COVID-19 outbreak. It has begun issuing Emergency Use Authorization (EAU) to make available diagnostic and therapeutic medical devices to diagnose and respond to public health emergencies. Recently, Abbott received an EAU from the FDA for its COVID-19 diagnostic, and announced goals to ramp up U.S. production to 1 million tests per week by the end of March. The company has already shipped 150,000 PCR tests to its existing customers, for use on its m2000 RealTime in vitro diagnostic system. FDA has also approved the use of the first rapid diagnostic test that could detect coronavirus in approximately 45 minutes.⁵

In this direction, pharmaceutical companies are constantly working to develop medication for the treatment of COVID- 19. China has already developed the first medication. However, as per Xu Nanping, China's vice-minister of Science and Technology, the clinical trials for the medication will only be completed by April 2020. Pharmaceutical companies across the globe have developed drug/vaccines for COVID-19. These are listed in the table below (Table 2).

⁵<https://www.fda.gov/emergency-preparedness-and-response/mcm-issues/coronavirus-disease-2019-covid-19>

Name of the Company	Country	Name of the Drug/Vaccine	Stage
Vaccines			
Ascletis Pharma	China	Ganovo® and Ritonavir combination therapy	Pre Clinical
CanSino Biologics	China	Vaccine	Phase 1
Arcturus Therapeutics	United States	Vaccine	Preclinical
Inovio Pharmaceuticals	United States	DNA vaccine	Preclinical
Johnson & Johnson	United States	Janssen AdVac® and PER.C6	Preclinical
BioNTech and Pfizer	Germany and United States	mRNA vaccine	Preclinical
CureVac	Germany	mRNA vaccine	Preclinical
GlaxoSmithKline	United Kingdom	Vaccine	Preclinical
Moderna Therapeutics	England	mRNA-1273	Phase 1
Sanofi	France	rDNA vaccines	Preclinical
Drug			
Gilead Sciences	United States	Remdesivir	Phase 3
Eli Lilly	United States	--	Preclinical
Biocryst Pharma's	United States	Galidesivir (BCX4430)	Advance development stage
Pfizer	United States	--	Preclinical
Regeneron Pharmaceuticals	United States	REGN3048-3051	Preclinical
Vir Biotechnology	United States	--	Preclinical
Sanofi and Regeneron	France and United States	Kevzara	Preclinical
Takeda	Japan	--	Preclinical

Table 2: List of the drugs/vaccines against COVID-19 which are under development

Source: www.clinicaltrialsarena.com

The entry of these new medicines, though highly anticipated, may bring with them the issue of patent rights. The main concern would revolve around patent grant- whether the developer of the medicine will be granted with a patent or a direct compulsory licence (CL) would be issued in light of public benefit. In this regard, several countries including India may invoke the provision of granting a compulsory license. China has already passed a resolution which will give power to the Government of China to grant a CL for any medications developed for relief against COVID-19.

This action of granting a CL is fully consistent with the Trade-Related Aspects of Intellectual Property Rights (TRIPS) agreement. Article 31 of TRIPS agreement mentions about the provision of compulsory license which states that a country can issue a CL in case of national emergency. However, proper remuneration should be paid to actual patent holder.

There may be an increase in the number of CLs granted for any drug developed to combat coronavirus, thus the situation is likely to benefit the generic drug manufacturers. In most developing countries, where the majority of population lives below the poverty line, generic drugs will safeguard patient's interest to access affordable drug. Thus, this global health crisis may prove to be an opportunity for Indian generic drug manufacturers to increase their market access as with India being the largest producer of generic drugs, we would be looked upon for generic drug supply by other countries.

The major challenge faced by the Indian Pharmaceutical Industry currently is the restricted imports of APIs from China. As per the Trade Promotion Council of India, 85 percent of the API imports in India are from China and thus this "overdependence of the Indian pharmaceutical industry on imported APIs primarily from China, US and Italy exposes it to raw material supply disruptions and pricing volatility".

However, with the recent announcement of the Policy on Promotion of Domestic Manufacturing of APIs and Key Starting Materials (KSMs), the Indian government and pharmaceutical industry has taken a major step towards the creation of a self-sufficient healthcare ecosystem in India.

LEARNINGS

History repeats itself. A well known adage, this has also transpired itself into our reality today. Although the medical capacities of humanity are vastly different from that even 20 years ago, lessons can always be learnt from the past to apply in present situations. This section deals with the learnings from the previous pandemics as well as some key takeaways from measures imposed by certain countries to combat COVID-19.

Learnings from the past

Diseases, epidemics, plagues and pandemics have been prevalent since ancient times. The living arrangements like close proximity of humans with animals facilitated the spread of zoonotic diseases. The earliest civilizations, remaining isolated from one another experienced local epidemics but not pandemics. However, the spread of the diseases began to accelerate when people started to live in villages, towns and cities. With building up of empires, the diseases travelled through trade and commerce routes leaving contagious diseases to be dealt on a larger scale.

Looking at the past, one of the worst pandemics in the human history which hit in mid-sixth century was the Bubonic Plague. Another classic example is that of the “Spanish Influenza” of 1918. Other major impacting pandemics include SARS in 2002-03, H1N1 pandemic in 2009 and Ebola in 2014-2016. The past experiences have shown pandemics have a high impact and generally cause panic and outrage. The experiences from the past provide a rich source of information which can prove to be helpful in tackling similar outcomes and also provide examples of mistakes to be avoided.

The H1N1 pandemic or Swine flu lasted over a year, affecting 214 countries and causing around 151,700-575,400 deaths worldwide⁶ during the first year after the circulation of the virus. Although, the response from governments of each country has been much faster as compared to 10 years ago, the end to the recent pandemic (COVID-19) is unpredictable.

Some noteworthy efforts and advancements have been made by CDC in influenza science and preparedness since 2009. Learnings from fighting swine flu in the past have been considered to improve domestic and global capacity to detect and respond to novel flu viruses.

Some steps and measures taken in the last 10 years which may be used as an example to strengthen the facilities to combat similar situations in future:

- **Monitoring and Detection:** CDC expanded and strengthened the flu surveillance systems since the 2009 flu pandemic. It involves standardised sampling strategy for flu across public health and clinical laboratories for easy and rapid detection of new flu virus; A systematic assessment of the performance of Rapid Influenza Diagnostic Tests (RIDTs) for improved use and developments of rapid flu virus tests (annual testing of all commercial flue tests to comply with new testing standards); Expansion of testing laboratories for accelerated testing and response time.
- **Risk Assessment:** CDC developed tools to help assess the public health risks associated with specific flu viruses. It includes new risk assessment tools that assess the potential pandemic risk posed by a novel flu virus prior to its emergence and severity after emergence (informs pre-pandemic preparedness activities and public health response during an outbreak); CDC-led forecasting activities for improved pandemic preparedness through ground-breaking work in predicting the timing, peak, and intensity of regular flu seasons.

⁶ CDC - <https://www.cdc.gov/flu/pandemic-resources/2009-h1n1-pandemic.html>

- **Prevention and Treatment:** Increased capacity to make vaccines with introduction of new vaccine technologies; Investments in research to develop universal flu vaccine for protection against a wider range of flu viruses; Progress in synthetic biology (creation of vaccine viruses in laboratories using genetic sequencing data) for rapid generation of vaccine viruses against new emerging avian and swine flu viruses; Updated pre-pandemic planning guidance reflects learnt lessons from past pandemic response (e.g. more detailed guidance on use of non-pharmaceutical interventions to slow the spread of flu during a pandemic).

Also, the WHO launched a 10 year global strategy in 2019 that aims to reduce the burden and impact of seasonal, zoonotic and pandemic flu. The strategy calls on countries and partners to align their global and national capacities for flu prevention, rapid detection and response.

Learnings from Other Countries

Notwithstanding the second wave of cases which emerged recently, it may be considered that certain countries were successful in combating the spread of COVID-19. These include the likes of Singapore, South Korea and Hong Kong. Some measures which were common to these areas and may be worth emulating are:

- Taking the threat seriously and taking quick action.
- Rapid Development of detection kits
- Mobilisation of existing governmental units in the ministries of health, welfare and foreign affairs, regional municipalities and other offices which were set up in previous pandemics/epidemics.
- Widespread rigorous quarantine measures.
- Immediate and intensive testing at multiple centres: Testing should be extensive and affordable.
- Deployment of a central tracking mechanism. This includes: an app which publicly informs citizens of known cases within 100 metres of where they are (South Korea), tracking bracelet (Hong Kong), telephonic and photographic proof of quarantined individuals' whereabouts (Singapore).
- Early practise of social distancing.
- Proper information dissemination to the public.
- Temporary provision of subsidy to cover basic expenses.

Upon observation, it is clear that India has already taken several of these aforementioned steps.

WAY FORWARD

With a large population to protect and an alleged missed opportunity to respond quickly to the situation, many questions were raised over India's ability to cope with the pandemic. With a calculated approach and a glowing commendation from the WHO for its efforts so far, India seems to be managing well enough. While the battle to prevent community spread of the virus is still on, there are positive signs. Still, there is a need for strengthening of public health surveillance, and healthcare services in all districts and creation of adequate laboratory diagnostic capacities. Research has to be a key component of the Health management strategy.

Additionally, as the focus till now has been on combating the spread of the virus, it remains to be seen what the Governments around the world, including India, do to allay the fears of a global recession and how they deal with the economic fallouts of the pandemic.

The need for global collaboration in health security has been felt in the past and even more so with the current pandemic. The outbreak of the COVID-19 is hardly the first such crisis humanity has dealt with in the last few decades. While prevention of such outbreaks would be the Utopian ideal, at the very least our ability to address these outbreaks and stop them quickly should improve with each experience. This is the goal that every country, decision maker and individual should strive toward.

(Note: This paper has been prepared by Aishwarya, Anjali Chauhan and Himani of RVVeKommunicate.)

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